

1. A computer-based teaching and evaluation method comprising:
presenting information to a student using a plurality of instructional strategies;
assessing the students understanding of the information in each of said strategies;
based on the assessment, determining the success of each of the plurality of instructional
strategies in instructing the student during the presentation; and
in subsequent information presentations, increasing the use of those instructional
strategies having greater success in presenting the information over those
strategies having less success.

2. The method of claim 1, further comprising:
defining a plurality of concepts based on the information being presented; and
selecting at least one instructional strategy in which to present each concept to the
student.

3. The method of claim 1, further comprising:
before presenting the information, defining a plurality of concepts based on the
information;
based on the concepts, generating a content outline of the information;
associating a set of assets with each of the plurality of concepts.

4. The method of claim 2, further comprising providing a summary of each concept.

5. The method of claim 1, further comprising establishing pre-requisites needed by
the student to enable the student to view the information.

6. The method of claim 1, further comprising generating evaluation instruments utilized in the assessing step to measure competencies relating to a specific concept within the information.

5 7. The method of claim 1, comprising performing the information assessment step either prior, during, or after the information presentation step

8. The method of claim 1 wherein the instructional strategies are selected from the group consisting: abstract, example, problem solving, analogy, discovery, simulation, or procedure.

9. The method of claim 1, further comprising assigning a rating regarding the relative strength of each instructional strategy associated with a selected concept.

10 10. The method of claim 1, further comprising tracking the frequency of use of each instructional strategy.

11. The method of claim 1, further comprising selecting an instructional approach for use under a selected instructional strategy.

12. The method of claim 1, further comprising preparing at least one assignment for the student to perform as part of the information presentation step.

13. The method of claim 2, further comprising assigning a task to an author to develop content for the information to be presented.

14. A computer-based teaching and evaluation method comprising:
presenting information to a student in a plurality of instructional strategies;
evaluating the student's comprehension of the presented information in each of said
strategies;

5 ranking each of the instructional strategies based on success of the student's
comprehension evaluation; and
modifying information presentation to the student to favor using selected instructional
strategies having a higher ranking over the other instructional strategies.

10 15. The method according to claim 14, further comprising repeating each step for new
information for the student.

16. The method according to claim 14, wherein the step of ranking comprises
weighting each instructional strategy according to student's success.

15 17. The method according to claim 16, wherein the modifying step utilizes the
instructional strategies in a random pattern of presentation to the student.

18. The method according to claim 14, further comprising building a profile of a
20 learning style of the student based on the ranking of the instructional strategies.

19. The method according to claim 18, further comprising utilizing the learning style
profile of the student to determine preferred instructional strategies for presenting information to
the student in subsequent teaching sessions.

20. A computer-based teaching and evaluation method comprising:
presenting information to a student in a plurality of instructional strategies;
evaluating the student's comprehension of the presented information in each of said
strategies;
5 ranking each of the instructional strategies based on success of the student's
comprehension evaluation; and
optimizing the presentation of information by increasing the use of those instructional
strategies having a higher ranking than the other instructional strategies.

10 21. The method according to claim 20, further comprising repeating each step for
presenting additional information to the student.

22. The method according to claim 20, wherein the step of ranking comprises
weighting each instructional strategy according to the student's comprehension of information
45 presented within each instructional strategy.

23. The method according to claim 23, wherein the modifying step utilizes the
instructional strategies in a random pattern of presentation to the student.

20 24. The method according to claim 20, further comprising building a profile of a
learning style of the student based on the ranking of the instructional strategies.

25 25. The method according to claim 24, further comprising utilizing the learning style
profile of the student to determine preferred instructional strategies for presenting information to
the student in subsequent teaching sessions.

26. A computer-based teaching and evaluation system comprising:
a presentation engine to present information to a student using a plurality of instructional
strategies;
a data store, coupled to the presentation engine, to store the plurality of instructional
strategies and content related to presentation of those strategies;
an assessment engine, coupled to the presentation engine, to assess the students
understanding of the information in each of said strategies and to determine the
success of each of the plurality of instructional strategies in instructing the student
during the presentation; and
a learning management engine, coupled to the assessment engine and the presentation
engine, to adjust the information presentation based on the student assessment by
increasing the use of those instructional strategies having greater success in
presenting the information over those strategies having less success.

27. The system of claim 26, further comprising a content development tool, coupled
to the presentation engine to define a plurality of concepts based on the information being
presented and to select at least one instructional strategy in which to present each concept to the
student.

28. The system of claim 27 wherein the content development tool generates a content
outline of the information and associates a set of assets with each of the plurality of concepts, the
set of assets being stored in the data store.

29. The system of claim 26 wherein the assessment engine determines whether pre-
requisites needed by the student to enable the student to view the information have been satisfied.

30. The system of claim 27 wherein the content development tool can generate evaluation instruments utilized to measure student competency relating to a specific concept within the information.

5 31. The system of claim 26 wherein the instructional strategies are selected from the group consisting: abstract, example, problem solving, analogy, discovery, simulation, or procedure.

10 32. The system of claim 26 wherein the assessment engine assigns a rating regarding the relative strength of each instructional strategy associated with a selected concept.

33. The system of claim 27 wherein the content development tool can track the frequency of use of each instructional strategy.

15 34. The system of claim 26 wherein the presentation engine provides at least one assignment to the student to be performed outside of the learning session.

20 35. The system of claim 27 wherein the content development tool allows at least one assignment to be given to at least one author to develop the information.

36. A computer-based teaching and evaluation system for use over a computer network comprising:

a presentation engine to present information to a student using a plurality of instructional strategies;

a display means, coupled to the presentation engine, to display the information;

a data entry means, coupled to the presentation engine;

a data store, coupled to the presentation engine, to store the plurality of instructional strategies and content related to presentation of those strategies;

an assessment engine, coupled to the presentation engine, to assess the students

understanding of the information in each of said strategies and to determine the success of each of the plurality of instructional strategies in instructing the student during the presentation; and

a learning management engine, coupled to the assessment engine and the presentation engine, to adjust the information presentation based on the student assessment by increasing the use of those instructional strategies having greater success in presenting the information over those strategies having less success.

37. The system of claim 36, further comprising a content development tool, coupled to the presentation engine to define a plurality of concepts based on the information being presented and to select at least one instructional strategy in which to present each concept to the student.

38. The system of claim 37 wherein the content development tool generates a content outline of the information and associates a set of assets with each of the plurality of concepts, the set of assets being stored in the data store.

39. The system of claim 36 wherein the assessment engine determines whether pre-requisites needed by the student to enable the student to view the information have been satisfied.

40. The system of claim 37 wherein the content development tool can generate evaluation instruments utilized to measure student competency relating to a specific concept within the information.

41. The system of claim 36 wherein the instructional strategies are selected from the group consisting: abstract, example, problem solving, analogy, discovery, simulation, or procedure.

42. The system of claim 36 wherein the assessment engine assigns a rating regarding the relative strength of each instructional strategy associated with a selected concept.

43. The system of claim 37 wherein the content development tool can track the frequency of use of each instructional strategy.

44. The system of claim 36 wherein the presentation engine provides at least one assignment to the student to be performed outside of the learning session.

45. The system of claim 36 wherein the network is an Internet connection further comprising a web-browser to enable the student to interface with the presentation engine.

46. A system for developing a computer-based teaching and assessment program, comprising:

a data store used to store data;

data entry means to enter data information to be stored in the data store;

5 a content development tool, coupled to the data store and the data entry means, to develop a teaching course that utilizes a plurality of instructional strategies to present course information to a student wherein the teaching course also assesses the student's comprehension and modifies the course presentation based on the instructional strategies that provide the best comprehension to the student.

10 47. The system of claim 46, wherein the content development tool defines a plurality of concepts based on the information being presented and selects at least one instructional strategy in which to present each concept to the student.

15 48. The system of claim 46, wherein the content development tool generates a content outline of the information and associates a set of assets with each of the plurality of concepts, the set of assets being stored in the data store.

20 49. The system of claim 46, wherein the instructional strategies are selected from the group consisting: abstract, example, problem solving, analogy, discovery, simulation, or procedure.

25 50. The system of claim 46, wherein a rating regarding the relative strength of each instructional strategy is associated with a selected concept.

51. The system of claim 46, wherein the content development tool can track the frequency of use of each instructional strategy.

52. A method for developing a computer-based teaching and assessment program,
comprising:

defining a course to be presented;

preparing a plurality of concepts from the course;

5 characterizing each concept in at least one of a plurality of instructional strategies,

wherein the course presentation can select among the instructional strategies to

present to a student based on those strategies that provide the student with the best

comprehension over the other strategies.

10 53. The method of claim 52, further comprising:

generating a content outline of the information; and

associating a set of assets with each of the plurality of concepts, the set of assets being
stored in the data store.

15 54. The method of claim 52, wherein the instructional strategies are selected from the
group consisting: abstract, example, problem solving, analogy, discovery, simulation, or
procedure.

20 55. The method of claim 52 further comprising rating the relative strength of each
instructional strategy associated with a selected concept.

56. The method of claim 52, further comprising tracking the frequency of use of each
instructional strategy.